

17A.1 INTRODUCTION

Appendix 17 to the Environmental Assessment (EA) for the Central Business District (CBD) Tolling Program (the Project) presents supplemental information related to the environmental justice analysis conducted for the Project and summarized in **Chapter 17, “Environmental Justice,”** of the EA. Specifically, **Appendix 17A** provides more detailed information on the methodology used for the analysis. **Appendix 17B** provides detailed maps illustrating the locations of minority and low-income populations in the study areas and **Appendix 17C** includes tables with related census information for all census tracts in the study area.

This part of Appendix 17 (Appendix 17A) provides an overview of the methodology used for the environmental justice analysis and the data sources used (**Sections 17A.2 and 17A.3**), followed by information on the methodology for identifying study areas for the analysis (**Section 17A.4**), the methodology for identifying minority populations (**Section 17A.5**), and the methodology for identifying low-income populations (**Section 17A.6**).

17A.2 OVERVIEW OF METHODOLOGY

The environmental justice analysis evaluates the potential for disproportionately high and adverse effects to environmental justice populations, consistent with FHWA’s 2011 *Guidance on Environmental Justice and the National Environmental Policy Act (NEPA)*, U.S. Department of Transportation (USDOT) Order 5610.2C, and FHWA Order 6640.23A. The following Federal regulatory and guidance documents were used for the environmental justice analysis:

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 1994)¹
- USDOT Order 5610.2C, Department of Transportation Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (May 2021)²
- USDOT, Environmental Justice Strategy (November 2016)³
- FHWA Order 6640.23A, FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (June 2012)⁴
- FHWA, Guidance on Environmental Justice and NEPA (December 2011)⁵
- FHWA, Environmental Justice Reference Guide (April 2015)⁶

¹ <https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf>.

² <https://www.transportation.gov/sites/dot.gov/files/Final-for-OST-C-210312-003-signed.pdf>.

³ <https://www.transportation.gov/transportation-policy/environmental-justice/environmental-justice-strategy>.

⁴ <https://www.fhwa.dot.gov/legisregs/directives/orders/664023a.cfm>.

⁵ https://www.environment.fhwa.dot.gov/env_topics/ej/guidance_ejustice-nepa.aspx.

⁶ https://www.fhwa.dot.gov/environment/environmental_justice/publications/reference_guide_2015/index.cfm.

- Federal Interagency Working Group on Environmental Justice & NEPA Committee, Promising Practices for Environmental Justice Methodologies in NEPA Reviews (March 2016)⁷

The following methodology was used to conduct the environmental justice analysis:

1. Review Project effects to identify appropriate study areas for analysis of environmental justice.
2. Identify existing minority and low-income (environmental justice) populations in the study areas.
3. Determine whether the Project would result in beneficial and/or adverse effects on the identified environmental justice populations. This includes consideration of measures to avoid, minimize, and/or mitigate any adverse effects of the Project as well as potential offsetting benefits to the affected environmental justice populations. Input from environmental justice populations regarding potential issues of concern and mitigation measures is an important part of this step.
4. If adverse effects would remain after implementation of measures to avoid, minimize, or otherwise mitigate adverse effects, and taking into account offsetting benefits, identify whether those effects would be predominately borne by environmental justice populations or are appreciably more severe or greater in magnitude on environmental justice populations than the adverse effect suffered by the non-minority or non-low-income population (these are considered disproportionately high and adverse effects).
5. If no disproportionately high and adverse effects are identified, the environmental justice evaluation is complete. If disproportionately high and adverse effects on environmental justice populations are anticipated, evaluate whether there is a further practicable mitigation measure or practicable alternative that would avoid or reduce the disproportionately high and adverse effects. As noted in FHWA's 2011 guidance, if there is a disproportionately high and adverse effect on an environmental justice population after taking benefits and mitigation into account, "FHWA will approve the proposed action only if it determines that no such practicable measures exist." In addition, FHWA will not approve the proposed action unless it determines "that there is a substantial need for a project, based on the overall public interest; and alternatives that would have less adverse effects on protected populations have either (a) adverse social, economic, environmental, or human health impacts that are more severe; or (b) would involve increased costs of an extraordinary magnitude."
6. In addition to assessing the potential for disproportionately high and adverse effects on environmental justice populations, the Project Sponsors must provide meaningful opportunities for environmental justice populations to provide input on the Project.

17A.3 DATA SOURCES

The environmental justice analysis is based on the conclusions of the other chapters of this EA, in combination with supplemental data on environmental conditions and information from the U.S. Census

⁷ The Project Sponsors reviewed this document in developing the analysis but used the guidance set forth in FHWA's 2011 Environmental Justice and NEPA. https://www.epa.gov/sites/production/files/2016-08/documents/nepa_promising_practices_document_2016.pdf.

Bureau. These conclusions were informed, in part, by concerns raised by the public during early public outreach for the Project in fall 2021.

Areas where residents are minority and/or low-income were identified using data from the U.S. Census Bureau 2015-2019 American Community Survey (ACS) 5-Year Estimates to identify census tracts that are low-income and/or minority. The 2015–2019 ACS 5-Year Estimates are the most current full set of demographic information, including racial and ethnic characteristics and household income and poverty status, available from the U.S. Census Bureau at the census tract level. The 2020 Census information now available does not include a full set of information.

Socioeconomic characteristics of the traveling public, including minority and low-income populations, were based on data from the U.S. Census Bureau's Census Transportation Planning Package (CTPP). The analysis of travel patterns in the regional study area focuses on low-income and minority people who travel to and from the Manhattan CBD to evaluate the effects of changing travel patterns on those people. The CTPP provides special tabulations, based on the U.S. Census Bureau ACS 5-Year Estimates, that are useful for transportation planning, including commuter flow data at varying geographic scales by mode of commute and household income. The CTPP data include information on commuter patterns for a range of income levels. The most recent CTPP is based on the 2012-2016 ACS 5-Year Estimates and has not been updated to reflect more recent ACS data.

Conclusions about the effects of the CBD Tolling Alternative on low-income and/or minority populations and potential measures to avoid, minimize, or mitigate those effects were informed by the early environmental justice public outreach for the Project in fall 2021. That outreach included public webinars to engage with environmental justice populations throughout the 28-county region, coordination with an Environmental Justice Technical Advisory Group, and meetings with an Environmental Justice Stakeholder Working Group.

17A.4 METHODOLOGY FOR IDENTIFYING STUDY AREAS

17A.4.1 Types of Study Areas

The environmental justice analysis evaluates two types of potential effects of the CBD Tolling Program, neighborhood effects and regional effects:

- **Local (Neighborhood) Effects:** These are effects on local communities. The potential neighborhood effects would be primarily related to diverted trips and changes in traffic patterns, and the potential resulting effects in terms of traffic congestion, air emissions, and noise.
- **Regional Effects:** These are effects on regional mobility. The analysis considers how implementation of the CBD Tolling Alternative would affect the regional population in terms of increased costs (tolls), changes in trip time, and changes in transit conditions.

To evaluate both types of effects of the CBD Tolling Program on environmental justice populations, two different study areas were used:

- **Local (Neighborhood) Study Area:** Based on a review of Project effects identified in other portions of the EA, this study area encompasses locations where localized effects (such as changes in traffic volumes, air emissions, or noise) would occur with the Project.
- **Regional Study Area:** The regional study area encompasses the 28-county study area that is the main catchment area for trips to and from the Manhattan CBD and the area where changes in travel patterns and mobility would occur.

17A.4.2 Review of Effects of CBD Tolling Alternative to Identify Environmental Justice Study Areas

Chapter 16, “Summary of Effects,” of the EA provides a summary of the CBD Tolling Alternative’s effects both locally and regionally. FHWA and the Project Sponsors reviewed those conclusions as well as concerns raised during public outreach for the Project to adjust the environmental analyses conducted for this EA and determine what Project effects have the potential to affect environmental justice populations. This informed selection of study areas for the environmental justice analysis and the topics to be considered in the analysis.

The information presented in **Chapters 4 through 15** of this EA describe the effects of implementation of the CBD Tolling Alternative on the general population and identify potential adverse effects and measures to avoid, minimize, or mitigate those effects.

In addition, during environmental justice public outreach conducted for the Project in fall 2021, members of the public raised a number of concerns related to the Project’s potential for effects on environmental justice populations, and FHWA and the Project Sponsors reviewed those concerns and included them in the analysis of environmental justice. **Table 16-1 in Chapter 16, “Summary of Effects,”** of the EA identifies the overall effects of the Project, compares the effects of the range of tolling scenarios analyzed in the EA, and identifies the potential for adverse effects on the overall population. FHWA and the Project Sponsors reviewed those conclusions as well as concerns raised during public outreach for the Project to determine what Project effects have the potential to affect environmental justice populations. This informed selection of study areas for the environmental justice analysis and the topics to be considered in the analysis.

17A.5 METHODOLOGY FOR IDENTIFYING MINORITY POPULATIONS

17A.5.1 Definitions

USDOT Order 5610.2C and FHWA Order 6640.23A include the following definitions related to minority populations:

- **Minority:** a person who is Black or African American (not Hispanic), American Indian and Alaskan Native, Asian American, Native Hawaiian or other Pacific Islander, and Hispanic or Latino.
- **Minority population:** Any readily identifiable groups of minority persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons, who will be similarly affected by a proposed FHWA program, policy, or activity.

This analysis also includes people who identified themselves as “some other race” or “two or more races” in the U.S. Census Bureau 2015–2019 ACS 5-Year Estimates.

17A.5.2 Minority Populations in Local (Neighborhood) Study Area

Census tracts were considered to be minority if either: (1) at least 50 percent of the census tract’s population identifies as minority; or (2) the percentage of population identifying as minority in the census block group exceeds the share of minority population in the county where that census tract is located.

17A.5.3 Minority Populations in Regional Study Area

The environmental justice analysis considers the Project’s potential for effects on minority-population commuters, travelers, or individuals in specific industries, businesses, or other groups that could be affected by increased cost associated with accessing the Manhattan CBD. To identify minority populations among these groups, the Project Sponsors used worker flow information from the CTPP.

Data is available in the CTPP regarding mode of travel by racial/ethnic group, and this data was used to identify overall travel patterns for minority people who work in the Manhattan CBD. However, the CTPP does not have data on minority commuters’ travel modes that also identifies the locations from which they travel. For this information, the Project Sponsors estimated the general locations from which minority commuters drive to the Manhattan CBD using a several-step process. For each census tract, information is available regarding travel modes for people who travel to work in Manhattan. The analysis assumed that the travel modes for all workers traveling to Manhattan from the tract also apply to the minority population in those tracts who are traveling to Manhattan for work. Using that assumption, the Project Sponsors estimated the number of minority people who commute to work in the Manhattan CBD by travel mode from each tract.

This methodology used data sets available in the CTPP in the first four steps before estimating in the final, fifth step:

1. Identify all census tracts in the 28-county region that are origins for minority people who work in the Manhattan CBD: the result is 4,311 census tracts.
2. For all tracts identified in step 1, identify all tracts that are origins for workers who drive to work in the Manhattan CBD: the result is 3,427 census tracts.

3. For all tracts identified in step 2, identify tracts that do not have any minority workers who drive to work, regardless of destination. The result is 25 tracts, which are then subtracted from those identified in step 2, leaving 3,402 census tracts with minority people who work in the Manhattan CBD and potentially could drive.
4. For the tracts identified in Step 3, identify tracts where all workers who commute to the Manhattan CBD drive. There are 31 such tracts, with 470 minority workers. Therefore those 470 minority workers drive to the Manhattan CBD. Similarly, identify tracts where all workers are minority or all drivers are minority. The result of this step is 8,764 minority auto commuters in 345 tracts.
5. For the remaining 3,060 census tracts, identify the percent of all workers who commute by car to the Manhattan CBD and identify the number of minority people who commute to the Manhattan CBD from the tract. Apply the auto share percentage to the minority workers, assuming that the same percentage of minority workers drives as the percentage of overall workers.

Table 17A-1 provides a summary of the results using this approach.

Table 17A-1. Estimating Minority Workers Who Drive to the Manhattan CBD

| STEP | SOURCE | RESULT |
|--|--|---|
| 1. Census tracts that are the origin for minority people who work in the Manhattan CBD | CTPP data on worker flows between census tracts, by race | Total minority workers in the Manhattan CBD Identification of all census tracts as origins |
| 2. Census tracts that are origins for all workers who drive to the Manhattan CBD | CTPP data on worker flows between census tracts, by mode | Identification of specific census tracts from which people drive to work to the Manhattan CBD |
| 3. Census tracts where no minority workers drive to work | CTPP data on worker origins and mode to work, by race (no destinations) | Identification of specific census tracts from which no minority workers can drive to work in the Manhattan CBD |
| 4. Census tracts where all workers commute to the Manhattan CBD by driving, all workers are minority, or all drivers are minority. | CTPP data on worker flows, by race and/or by mode | Total minority commuters to the Manhattan CBD who drive from specific identified census tracts |
| 5. For remaining census tracts, apply overall worker mode share to the Manhattan CBD to minority people who work in the Manhattan CBD. | CTPP data on worker flows by mode applied to CTPP data on worker flows by race | Estimated number of minority workers who drive to the Manhattan CBD from remaining tracts |
| RESULTING TOTAL: | | Estimated total of minority workers who drive to the Manhattan CBD and from which specific census tracts |

17A.6 METHODOLOGY FOR IDENTIFYING LOW-INCOME POPULATIONS

17A.6.1 Definitions

USDOT Order 5610.2C and FHWA Order 6640.23A include the following definitions related to minority populations:

- **Low-Income:** A person whose household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines.
- **Low-Income Population:** Any readily identifiable groups of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons who will be similarly affected by a proposed FHWA program, policy, or activity.

The U.S. Census Bureau identifies households and household income. According to the U.S. Census Bureau, a household “includes all the persons who occupy a housing unit as their usual place of residence.”⁸

The analysis for this Project used information on the number of households living in poverty from the U.S. Census Bureau 2015–2019 ACS 5-Year Estimates. The HHS poverty guidelines are based on annual statistical poverty thresholds from the U.S. Census Bureau.⁹ The U.S. Census Bureau poverty thresholds are used to identify the population living in poverty for statistical purposes, while the HHS poverty guidelines are used to determine eligibility for Federal programs. Poverty thresholds vary by family size and composition, while poverty guidelines vary by household size and geographic location and both are updated annually.¹⁰

The environmental justice analysis used information from the U.S. Census Bureau’s 2015-2019 ACS 5-Year Estimates to identify low-income census tracts in the study area. Information on the population with household incomes below the poverty thresholds as defined by the U.S. Census Bureau is available at a local (census tract) level, whereas information on the HHS poverty guideline is not. However, as the HHS poverty guidelines are based on the Census Bureau threshold, the latter is commonly used as a proxy for the former.

Based on a review of potential methodologies and consideration of a number of critical factors, the Project Sponsors in consultation with FHWA identified income thresholds to be used in identifying low-income populations that are appropriate for identifying low-income populations in the Project study area and reflect local conditions and cost of living in the study area.

⁸ <https://www.census.gov/quickfacts/fact/note/US/HSD410219>.

⁹ <https://aspe.hhs.gov/frequently-asked-questions-related-poverty-guidelines-and-poverty>.

¹⁰ This approach is recommended in the Federal Interagency Working Group on Environmental Justice & NEPA Committee’s *Promising Practices for Environmental Justice Methodologies in NEPA Reviews* (2016).

17A.6.2 Low-Income Populations in Local (Neighborhood) Study Area

17A.6.2.1 Approach

The Project Sponsors identified census tracts with low-income populations using a low-income threshold of twice the Federal poverty threshold. (More specifically, the Project Sponsors used data from the U.S. Census on the number of individuals in each census tract with household incomes up to 1.99 times the Federal poverty threshold. For simplicity, this analysis refers to that information as twice the Federal poverty threshold.) This income level was used to identify low-income census tracts as follows:

1. The percentage of individuals with household incomes up to twice the Federal poverty threshold in each census tract was identified and compared to that percentage for a larger reference area. Census tracts with a higher percentage of population with household incomes at or below twice the Federal poverty threshold were considered low-income.
2. The reference area for comparison was the regional 28-county study area.

The rationale for those two steps is described below.

17A.6.2.2 Rationale for Low-Income Threshold for Census Tracts

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), directs Federal agencies to identify and address, as appropriate, disproportionately high and adverse effects of Federal actions on minority and low-income populations. That document does not define “low-income.” While the USDOT Order 5610.2C and FHWA Order 6640.23A define low-income populations as people living below the HHS poverty guideline, the 2011 FHWA guidance document notes that Project Sponsors may adopt a more inclusive threshold for low-income as long as it is inclusive of all persons at or below the Federal poverty guidelines.¹¹ The Project Sponsors used a threshold for identifying populations living in poverty that is specific to the Project context, recognizing that the level of income that constitutes poverty is higher in the New York metropolitan region than it is nationwide, given the higher cost of many items, and particularly housing, in the New York City area.

In identifying the low-income threshold of twice the Federal poverty threshold, the Project Sponsors considered the following factors, to ensure that the approach reflects the local context for the Project and employs an appropriate methodological approach:

- The threshold used for identifying low-income census tracts should relate to the Federal poverty threshold, rather than to a specific household income level. The Federal poverty threshold incorporates consideration of household size and composition, which is important in identifying a household’s economic strength.

¹¹ The U.S. Census Bureau has established poverty thresholds to identify the population living in poverty, which are updated each year. These can be used to identify the population living in poverty in a specific location, such as a census tract. The HHS poverty guidelines are a simplified version of those Federal poverty thresholds that are used for administrative purposes—for instance, determining financial eligibility for certain Federal programs. <https://aspe.hhs.gov/frequently-asked-questions-related-poverty-guidelines-and-poverty>.